Policy Brief: Exports and Innovation in Emerging Economies

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Exports and innovation in emerging economies
Firm-level evidence from South Africa

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Introduction

In today's academic and policy debates on growth and development in Low Income Countries (LICs), the importance of innovation raising productivity in the private sector, and within manufacturing Small and Medium Sized Enterprises (SMEs) in particular, has been increasingly emphasized. Innovation is crucial in LICs, because innovation in all economic sectors is fundamental for growth, in order to catch up with middle and high income economies.

One possible way to promoting innovation in LICs is opening up the local economy in the globalizing world and promote international trade. In fact, liberalizing international trade and attracting foreign direct investment are at the core of many economic development policies in LICs. The underlying idea is that foreign competition increases the pressure on domestic firms to cut inefficiencies, while access to foreign markets can raise their productivity by increasing their scale, exposing them to foreign technology or raising their incentives to innovate. Although there is some research evidence that exporting firms are more productive and innovate more than non-exporters, clear insight is lacking whether exporting does trigger innovation, in particular for low or middle income countries.

There are several ideas whether and why export induces firms to innovate. One is that innovations reduce the cost of production per unit or raise the price obtained per unit (quality). Reaching a higher scale through exports makes it more profitable to invest in innovation. Another insight is that an export market may be different from the home market in many ways, as foreign consumers may have different preferences. These features of foreign markets may induce firm to concentrate on some products, adapt some of their product attributes or develop new products. There is now evidence that, in particular for firms located in LICs, selling on (typically more developed) export markets requires the firm to upgrade its product or that firms only sell their best products on export markets. Additionally, exporting exposes firms to international best practices and spillovers from abroad, potentially raising the returns to investing in the absorption capacity of these technologies.

In the framework of a DFID-funded research project entitled '*Enabling Innovation and Productivity Growth in Low Income Countries (EIP-LIC)*', a team of researchers Tilburg University, Université Catholique de Louvain and University of Pretoria examined the link between exports and innovation within SMEs in South

Africa. Specifically, the research focused whether exporting raises the probability that firms innovate in the context of an emerging economy. The research resulted into an original working paper[1] entitled *'Exports and innovation in emerging economies Firm-level evidence from South Africa'* by Gonzague Vannoorenberghe. This policy brief provides the research approach, main outcomes and policy implications of the paper.

Research approach

The research compares exporting with non-exporting South African SMEs in terms of how they were engaged in product and process innovation. The research defined product innovation as "the introduction to market of a new or significantly improved good or service" and a process innovation as "the use of new or significantly improved methods for the production or supply of goods and services".

The research analysed the firm-level relationships between product and process innovation on the one hand and export on the other. The research used a new rich dataset, collected within the DFID EIP-LIC project framework, on the innovation and exports of 500 South African SMEs collected between 2011 and 2013. The survey focuses on firms in six core manufacturing industries (Automotive, chemicals, defense, food production, pharmaceuticals and textile) in the four largest South African provinces: Gauteng, Kwazulu Natal, Western Cape and Eastern Cape.

Research findings

The research finds that exporting firms are significantly more introducing product innovation in the South African context; product innovation is positively associated with the export status of firms. The link between exports and process innovation is much weaker or absent all together. This is broadly in line with previous research and could suggest that the product characteristics are a more crucial for foreign markets than the cost dimension. Although there is a significant relationship between exports and product innovation, the question remains whether innovation stimulates firms to export, or whether it is the other way around. This 'causality' issue was difficult to isolate in the research, partly because both activities are interconnected and mutually influencing each other.

The research further address this issues by exploring the firm's motivation to innovate and export. The analysis shows that exporters typically report very different motives to innovate than non-exporters. In particular, foreign competition and foreign clients provide strong incentives for exporters to innovate. The exporters are also more likely to state that they introduce product innovation to enter new markets, increase their market shares or meet standards and regulations. These answers thus suggest that exporting provides additional incentives to innovate.

[1] The paper is accessible at the project's website (http://www.tilburguniversity.edu/dfid-innovation-and-growth) under 'publications and reports'.

Lastly, the research tests for a causal effect of exports on innovation using an instrumental variable approach. It shows that the distance between the location of a firm and the nearest transport hub predicts whether a firm exports. Firms with a higher probability to export because of their location do however not appear more likely to innovate, and this approach therefore fails to provide evidence for a causality from export to innovation.

It is worth noting that the research used traditional measures of process and product innovation and asked firms to provide exact descriptions of these innovations as well. It appeared that there was conceptual confusion among the SME owners of the how to define product and process innovations, which often did not correspond to the researchers' definition.

'…We confirm that product innovation is strongly associated with exports, even though other measures of innovation are not (e.g. process innovation). Exporters typically report very different reasons to innovate than non-exporters, which suggests that exporting provides additional incentives to innovate, and that the causality runs at least partly from exporting to innovating…'

Policy implications

An important outcome of the research is that successful exporters in South African are mostly involved in product innovation and less in process innovation. While the different tests do not suggest that causality goes particularly in one way or the other, the association between exports and product innovation appears robust. This suggests that policies aiming to promote innovation and exports should be thought of hand in hand rather than designed in fully separate ways.

Then again, the research reveals conceptual fuzziness between product and process innovation too. Often, firms combine process and product innovation; new technology or production processes enable the launch of new products. The qualitative study in the framework of the DFID EIP-LIC project also show various firm cases where product and process innovation go hand in hand in firms in South Africa. Usually one type of innovation comes first, then triggering, enabling of necessitating other types of innovation.

Policy therefore should not distinguish too strictly between the product and process innovation. In fact, from a development economic perspective, the distinction may not be that relevant; if value is created leading to higher productivity or better competitiveness – whether through product or process innovation - then it will contribute to economic growth.

A notable outcome of the research is that there is no clear cause-effect relation identified between innovation resulting in more export, or the other way around. The expectations of innovation policy should be realistic in terms of directly resulting into more export as well. Regardless the absence of a strong causality, innovation and export do mutually strengthen each other within a firm. A more pragmatic policy approach is including an innovation dimension in export policies, and including export dimension in innovation policies. In fact for a policy the end result that counts is that both innovation and export increase.

The research further explores the underlying motives of exporters, which offers some informative insights for policies. The exports mention that foreign competition and foreign clients provide strong incentives for them to innovate. Trade liberalization policies could therefore may thus generate some benefits in terms of innovation.

The research lastly shows that exporting firms import inputs and collaborate with multinational firms. That provides the idea of policies facilitating local firms to collaborate with multinational firms further strengthens the local innovative capacity. Government policy instruments could focus on the establishment of initial contacts through for instance match making events, business fairs or other platforms. The extent to which imports complements or substitutes for local production is however one dimension that deserves further investigation.

This policy brief is the product of a research project funded by the British Department for International Development (DFID) entitled 'Enabling Innovation and Productivity Growth in Low Income Countries' (EIP-LIC)/'. The project is implemented by Tilburg University (The Netherlands) and explores SME-level innovation in Low Income Countries (LICs) and factors that contribute to or limit its diffusion. Data collection and research collaborations take place in 10 African and Asian countries (Bangladesh, Ethiopia, Ghana, India, Indonesia, Kenya, Tanzania, South Africa, Uganda and Vietnam). The policy implications of research are presented in a series of policy briefs, targeted at a broad audience of policy makers within governments, business and development agencies with a view to quantifying research outcomes and promoting evidence-based policy making.